**Work Order ID 105534** *105534* 

*August-08-13 8:58:12 AM*

| | | | | | |
|---|---|---|---|---|---|
| **Item ID:** | D2810-5 | **Accept** | *N900040100* | **Setup Start** | *NS1* |
| **Revision ID:** | | | | **Stop** | *NS2* |
| **Item Name:** | Strut | | | | |
| **Start Date:** | 8/08/13 | **Start Qty:** ~~12.00~~ 9 | *12* | **Cust Item ID:** | |
| **Required Date:** | 8/08/13 | **Req'd Qty:** 12.00 | *12* | **Customer:** | |
| **Reference:** | | | | | |

**Approvals:** **Process Plan:** MLJ **Date:** 13-08-09 **Tooling:** ____ **Date:** ____ **Run Start** *NR1*

**QC:** ____ **Date:** ____ **SPC (Y/N):** ____ **Date:** ____ **Stop** *NR2*

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| 100 *100* Brake NC<br>Brake NC | NC BRAKE<br>**Memo**<br>1-Punch 304/316 SS Seamless Tubing 0.5" O.D. x 0.035" wall to length as per Dwg D2810 and spec control Dwg D2727 using Jig DT8012<br>2-Deburr | 0.00<br>0.00<br>24.06 | | | | 9 | SAD 130910 | | |
| 110 *110* QC<br>Quality Control | QC5- Inspect part completeness to step on W/O<br>**Memo** | 0.00<br>0.00<br>DAS 27 9-89 13.9.10 K | | | | 9 | | | |
| 120 *120* Powdercoat<br>Powder Coating | Black Sandtex(Ref:4.3.5.7) per QSI005 4.3<br>M 117538.<br>**Memo**<br>START TIME: 10:40.<br>OVEN TEMPERATURE: 320°<br>FINISH TIME: 11:10. | 0.00<br>0.00 | | | | 9 | | | DAS 34 9-89 |

| Draw Nbr | Revision Nbr |
|---|---|
| D2810 | Rev C |

DQA: ________ Date: ____________

NCR: Yes / No

# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

| Work Order: ____________ | DISPOSITION | AGAINST DEPARTMENT/PROCESS | | | |
|---|---|---|---|---|---|
| Part No. ____________ | Rework ☐ | Skid-tube ☐ | Crosstube ☐ | Water Jet ☐ | Engineering ☐ |
| NCR No. ____________ | Scrap ☐ | Machining ☐ | Small Fab ☐ | Prod. Eng. Coor. ☐ | Quality ☐ |
| | Use-as-is ☐ | Thermoforming ☐ | Finishing ☐ | Rec/Store/Packaging ☐ | Other ☐ |
| | Work Order Update ☐ | Large Fab ☐ | Composite ☐ | Supplier ☐ | ☐ |

| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|
| Doc/Data ☐ | | | | | | | | | |
| Equip/Tooling ☐ | | | | | | | | | |
| Operator ☐ | | | | | | | | | |
| Material ☐ | | | | | | | | | |
| Setup ☐ | | | | | | | | | |
| Other ☐ | | | | | | | | | |
| Process ☐ | | | | | | | | | |
| Supplier ☐ | | | | | | | | | |
| Training ☐ | | | | | | | | | |
| Unapproved ☐ | | | | | | | | | |

## FAULT CATEGORY

| Landing Gear | General | | | |
|---|---|---|---|---|
| ☐ Bending | ☐ Bend | ☐ Grain | ☐ Ovalized | ☐ Pressure/Forced |
| ☐ Centre Not Concentric to O/S | ☐ BOM/Route | ☐ Hardware | ☐ Over/Under tolerance | ☐ Temperature/Cure |
| ☐ Cracks | ☐ Broken/Damaged | ☐ Inspection Incomplete | ☐ Part Incorrect | ☐ Weld |
| ☐ Crushed/Crimped | ☐ Burrs | ☐ Instructions Incomplete/Unclear | ☐ Part Lost/Missing | ☐ Wrong Stock Pulled |
| ☐ Cuffs | ☐ Contamination | ☐ Maintenance | ☐ Part Moved | |
| ☐ Heat Treat | ☐ Countersink | ☐ Mislabeled | ☐ Positioned Wrong | |
| ☐ Inspection Strip in Tube | ☐ Cut Too Short | ☐ Misread | ☐ Power Loss/Surge | ☐ Other ____ |
| ☐ Ripples in Bend | ☐ Drill Holes | ☐ Offset | ____________ | |
| ☐ Torque Waves in Extrusion | ☐ Drawing | ☐ Out of Calibration | ____________ | |
| ☐ Turning Sequence | ☐ Finish | ☐ Out of Sequence | ____________ | |
| ☐ Wave/Twist in Tube | ☐ Folio | ☐ Outside Dimensions | | |

**Work Order ID 105534** *105534*
*August-08-13 8:58:12 AM*

| | | | | | |
|---|---|---|---|---|---|
| **Item ID:** | D2810-5 | **Accept** | *N900040100* | **Setup Start** | *NS1* |
| **Revision ID:** | | | | **Stop** | *NS2* |
| **Item Name:** | Strut | | | | |
| **Start Date:** 8/08/13 | **Start Qty:** 12.00 | *12* | **Cust Item ID:** | | |
| **Required Date:** 8/08/13 | **Req'd Qty:** 12.00 | *12* | **Customer:** | | |
| **Reference:** | | | | **Run Start** | *NR1* |
| | | | | **Stop** | *NR2* |

**Approvals:** **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______

**QC:** ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---|---|---|---|---|---|---|---|---|---|
| 130 *130* QC Quality Control | QC3- Inspect Part Finish Memo | 0.00 0.00 DAS 27 9-89 13 10 15 | | | | 9 | | | |
| 140 *140* Packaging Packaging | Identify as per dwg & Stock Location:_______ Memo 5J263 | 0.00 0.00 | | | | 13/10/16 (9) | | | DAS 32 9-89 |
| 150 *150* QC Quality Control | QC21- Final Inspection - Work Order Release Memo | 0.00 0.00 | | | | [signature] | Rm | 13/10/16. | |

RL 13-10-16

DQA: ________ Date: ____________

NCR: Yes / No

# WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

| Work Order: ____________ | **DISPOSITION** | **AGAINST DEPARTMENT/PROCESS** |
|---|---|---|
| Part No. ____________ | Rework ☐ | Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐ |
| | Scrap ☐ | Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐ |
| | Use-as-is ☐ | Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ |
| NCR No. ____________ | Work Order Update ☐ | Large Fab ☐ Composite ☐ Supplier ☐ ☐ |

| Root Cause | | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|---|
| Doc/Data | ☐ | | | | | | | | | |
| Equip/Tooling | ☐ | | | | | | | | | |
| Operator | ☐ | | | | | | | | | |
| Material | ☐ | | | | | | | | | |
| Setup | ☐ | | | | | | | | | |
| Other | ☐ | | | | | | | | | |
| Process | ☐ | | | | | | | | | |
| Supplier | ☐ | | | | | | | | | |
| Training | ☐ | | | | | | | | | |
| Unapproved | ☐ | | | | | | | | | |

**FAULT CATEGORY**

| **Landing Gear** | **General** | | | |
|---|---|---|---|---|
| ☐ Bending | ☐ Bend | ☐ Grain | ☐ Ovalized | ☐ Pressure/Forced |
| ☐ Centre Not Concentric to O/S | ☐ BOM/Route | ☐ Hardware | ☐ Over/Under tolerance | ☐ Temperature/Cure |
| ☐ Cracks | ☐ Broken/Damaged | ☐ Inspection Incomplete | ☐ Part Incorrect | ☐ Weld |
| ☐ Crushed/Crimped | ☐ Burrs | ☐ Instructions Incomplete/Unclear | ☐ Part Lost/Missing | ☐ Wrong Stock Pulled |
| ☐ Cuffs | ☐ Contamination | ☐ Maintenance | ☐ Part Moved | |
| ☐ Heat Treat | ☐ Countersink | ☐ Mislabeled | ☐ Positioned Wrong | |
| ☐ Inspection Strip in Tube | ☐ Cut Too Short | ☐ Misread | ☐ Power Loss/Surge | ☐ Other ____________ |
| ☐ Ripples in Bend | ☐ Drill Holes | ☐ Offset | ____________ | |
| ☐ Torque Waves in Extrusion | ☐ Drawing | ☐ Out of Calibration | ____________ | |
| ☐ Turning Sequence | ☐ Finish | ☐ Out of Sequence | ____________ | |
| ☐ Wave/Twist in Tube | ☐ Folio | ☐ Outside Dimensions | | |

# Picklist Print

*August-08-13 8:58:11 AM*



**Work Order ID:** **105534**

**Parent Item:** **D2810-5**

**Parent Item Name:** Strut

**Start Date:** 8/08/13 **Required Date:** 8/08/13

**Start Qty:** 12.00 **Required Qty:** 12.00

**Comments:** IPP A04.11.30New issueKJ/JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M304TR0.500W.035**<br>304 RD Tube .500 x .035W | | Purchased | No | | | 100 | f | 492.4211 | **1.9175** | ~~24.221053~~ | 18.1658 | | |

SAD 13-10-10

| Location | Loc Qty | Loc Code | |
|---|---|---|---|
| MAT017 | 492.42113 | | |
| 118702 | 0.00003 | | |
| 123303 | 138.9645 | | |
| 125513 | 353.4566 | 18.1658 | ~~24.2211~~ |

NCR: Yes / No

# WORK ORDER NON-CONFORMANCE / UPDATE

DQA: ________ Date: ____________

QA Closed: Date:

| Work Order: ____________ | **DISPOSITION** | **AGAINST DEPARTMENT/PROCESS** | | | |
|---|---|---|---|---|---|
| Part No. ____________ | Rework ☐ | Skid-tube ☐ | Crosstube ☐ | Water Jet ☐ | Engineering ☐ |
| NCR No. ____________ | Scrap ☐ | Machining ☐ | Small Fab ☐ | Prod. Eng. Coor. ☐ | Quality ☐ |
| | Use-as-is ☐ | Thermoforming ☐ | Finishing ☐ | Rec/Store/Packaging ☐ | Other ☐ |
| | Work Order Update ☐ | Large Fab ☐ | Composite ☐ | Supplier ☐ | ☐ |

| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---|---|---|---|---|---|---|---|---|---|
| Doc/Data ☐ | | | | | | | | | |
| Equip/Tooling ☐ | | | | | | | | | |
| Operator ☐ | | | | | | | | | |
| Material ☐ | | | | | | | | | |
| Setup ☐ | | | | | | | | | |
| Other ☐ | | | | | | | | | |
| Process ☐ | | | | | | | | | |
| Supplier ☐ | | | | | | | | | |
| Training ☐ | | | | | | | | | |
| Unapproved ☐ | | | | | | | | | |

**FAULT CATEGORY**

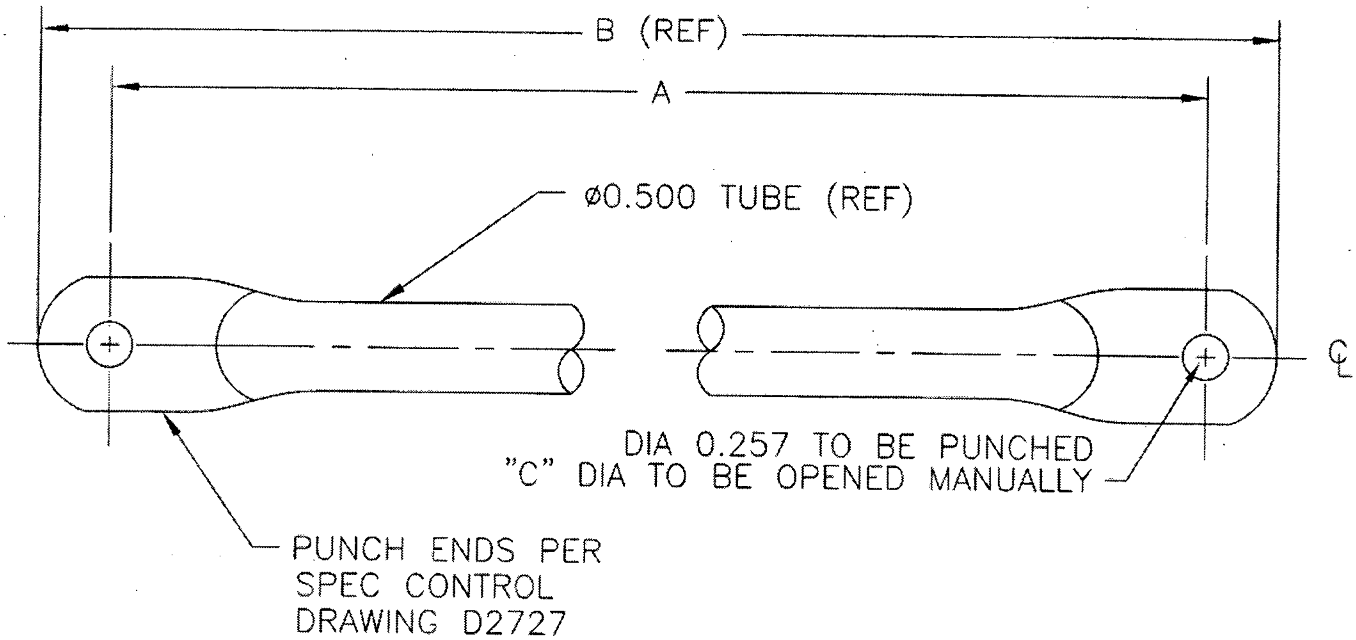
| **Landing Gear** | **General** | | | |
|---|---|---|---|---|
| ☐ Bending | ☐ Bend | ☐ Grain | ☐ Ovalized | ☐ Pressure/Forced |
| ☐ Centre Not Concentric to O/S | ☐ BOM/Route | ☐ Hardware | ☐ Over/Under tolerance | ☐ Temperature/Cure |
| ☐ Cracks | ☐ Broken/Damaged | ☐ Inspection Incomplete | ☐ Part Incorrect | ☐ Weld |
| ☐ Crushed/Crimped | ☐ Burrs | ☐ Instructions Incomplete/Unclear | ☐ Part Lost/Missing | ☐ Wrong Stock Pulled |
| ☐ Cuffs | ☐ Contamination | ☐ Maintenance | ☐ Part Moved | |
| ☐ Heat Treat | ☐ Countersink | ☐ Mislabeled | ☐ Positioned Wrong | |
| ☐ Inspection Strip in Tube | ☐ Cut Too Short | ☐ Misread | ☐ Power Loss/Surge | ☐ Other ________ |
| ☐ Ripples in Bend | ☐ Drill Holes | ☐ Offset | | ________ |
| ☐ Torque Waves in Extrusion | ☐ Drawing | ☐ Out of Calibration | | ________ |
| ☐ Turning Sequence | ☐ Finish | ☐ Out of Sequence | | ________ |
| ☐ Wave/Twist in Tube | ☐ Folio | ☐ Outside Dimensions | | ________ |

DART

| DESIGN | DRAWN BY | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA | |
|---|---|---|---|
| CHECKED | APPROVED | DRAWING NO. D2810 | REV. C<br>SHEET 1 OF 1 |
| DATE 04.11.22 | | TITLE STRUT | SCALE NTS |

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 00.11.08 | NEW ISSUE |
| B | 03.09.11 | ADD FINISH |
| C | 04.11.22 | ADD -5 |

RELEASED 05 03 11




| PART # | A | B | C |
|---|---|---|---|
| D2810-1 | 25.33 | 26.13 | N/A |
| D2810-3 | 24.60 | 25.40 | N/A |
| D2810-5 | 23.01 | 23.81 | 0.266 |

24.86

NO. 105534 MCJ 13-08-05

D2810-1/-3/-5

1) MATERIAL: AISI 304/316 STAINLESS STEEL TUBE, ø0.500 x 0.035 WALL (M304TR0.500W.035)
2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
3) FINISH: POWDER COAT BLACK SANDTEX (4.3.5.7) PER DART QSI 005 4.3
4) ALL DIMENSIONS ARE IN INCHES

## DART AEROSPACE LTD

| Description: Strut | | Work Order: 105534 |
|---|---|---|
| Inspection Drawing: D2810-5 | Rev: C | Part Number: D2810-5 |

# INSPECTION SHEET

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|---|---|---|---|---|---|---|
| 23.01 | +/- 0.030 | 23.030 | ✓ | | Measuring tape | |
| 23.81 | +/- 0.030 | 23.810 | ✓ | | Measuring tape | |
| 0.266 | +/-0.006 | 0.266 | ✓ | | Vern | |
| | +/- 0.001 | | | | | |
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| Measured by: SAD | Checked By: SB | QC inspector: DAS 27 9-89 | Engineering Approval (*if necessary*): |
|---|---|---|---|
| Date 13/10/10 | Date 13/10/10 | Date 13/10/10 | Date |